**GENERAL NOTES:**
1. All pipes to be lined in accordance with SANS 180, latest edition and the requirements of Johannesburg Water Services Ltd.
2. All pipes to be lined under trench conditions unless otherwise stated.
3. All hachured areas to be lined with waterproofing material.
4. Contraventions to be enquired of existing pipes with galvanized steel pipe lining to be carried out using a band of bitumen sealing compound on top of existing pipe.
5. All panel lifting eye to be fixed at bottom of panel and to be fitted to every 2m on all panels.
6. All plumbing to be carried out in accordance with SANS 180 and SANS 62.
7. All elevations to be fixed at all corners and change in direction of pipe to be fixed by a line of bolts, unless instructed otherwise.

**REFERENCE DRAWINGS:**
1. FOR BOILERS VALVES HAVEN TO DRAWING NO. JY32A6574
2. FOR WATER TANKS HAVEN TO DRAWING NO. JY326577

**GENERAL NOTES:**
3. All new fire hydrants are above ground.
Pipe Bends Schedule (>3.0 Deg)

<table>
<thead>
<tr>
<th>CH</th>
<th>Diameter1 (mm)</th>
<th>Diameter2 (mm)</th>
<th>Angle (Deg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>630</td>
<td>630</td>
<td>127.3</td>
</tr>
<tr>
<td>2</td>
<td>1680</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legends:
- NEW HYDRANT
- NEW PIPE
- NEW VALVE
- NEW TEE
- REDUCER
- NEW VALVE ON EXISTING PIPE
- NEW HYDRANT ON EXISTING PIPE
- EXISTING WATER PIPES TO BE DECOMMISSIONED
- EXISTING VALVE
- EXISTING PIPE
- EXISTING HYDRANT
- EXISTING END CAP
- EXISTING RAND WATER CHAMBER
- EXISTING PRV CHAMBER

GENERAL NOTES:
1. ALL PIPES TO BE Laid IN ACCORDANCE WITH SABS 287-92, WITH THE REQUIREMENTS OF JOHANNESBURG WATER.
2. ALL PIPES TO BE Laid UNDER TRENCH CONDITIONS UNLESS OTHERWISE SHOWN.
3. ALL NEW PIPE MATERIALS ARE 8 OF ARLIP PIPE WITH THE SABS 287-92 REQUIREMENTS.
4. EXISTING WATER PIPES TO BE DECOMMISSIONED IN ACCORDANCE WITH REQUIREMENTS OF JOHANNESBURG WATER.
5. TURNS IN VARIOUS ARE ALIGNED AS SHOWN IN DIRECTION.
6. PIPE YES TO BE CLASS 3 (AND HOPE PIPE TO BE `PE` DRY), OR OTHERS (DURABLE)
7. AMENDMENTS TO REFERENCE DRAWINGS.

SIGNATURES:
APPROVED BY: T.M.PANDAGUTA
DESIGNED:
DRAWN:
CHECKED:
SIGNATURE............................................................................
DATE......................................
ECSA REG. No...........................................................................
SEPTEMBER 2017
SIGNATURE..............................................................................
SEPTEMBER 2017
T.M.PANDAGUTA
DATE......................................

AMENDMENTS
DRAWING No.: JW13814-NAT-LAY-02
SCALE: A1

Johannesburg Water
17 HARRISON STREET
MARSHALLTOWN
2190
TEL: (011) 888-1400
FAX: (011) 888-1529

GENERAL NOTES:

LEGEND:
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- NEW TEE
- REDUCER
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- NEW HYDRANT ON EXISTING PIPE
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- EXISTING PRV CHAMBER
ANOTHER JOHANNESBURG WATER SERVICE DELIVERY PROJECT
HELPDESK (011)375-5555

PROJECT DETAILS:
CONTRACT NO.: JW...........
DESCRIPTION: - .........

CONSULTANT:
JOHANNESBURG WATER DESIGN SECTION
TEL: 011 688 1400

CONTRACTOR:

TEL: ..........................

CLIENT
JOHANNESBURG WATER-
INVESTMENT DELIVERY
TEL: 011 688 1400
TYPICAL TRENCH SECTION ACROSS PAVED WALKWAYS AND OPEN GROUND

NOTES:
1. PIPE SIZE ALLOWANCE OF 300mm TYPICAL FOR UP TO 700mm Dia.
   FOR PIPES GREATER THAN 300mm REFER TO SANS 10868 CLAUSES 5.2
   "MINIMUM BASE WIDTHS."
2. COMPACTED OF MAIN fill TO MINIMUM MOD ASH TO OR THAT OF
   SURROUNDINGS IN SITU UNDISTURBED GROUND AND AS DIRECTED BY THE ENGINEER.
3. DIMENSIONS IN MILLIMETERS(mm)
4. REFER ALSO TO JIA AND OTHER SERVICE PROVIDERS SPECIFICATIONS FOR BEDDING
   DETAILS IN ROAD RESERVES OR WHERE THE PIPE INTERSECT WITH OTHER SERVICES.

TYPICAL TRENCH SECTION BENEATH ROAD
1) Valve marker "V" must be painted
2) Water pipe marker "W"

Sizes of markers:
Capitals: Series E, 102mm in size according to the S.A. Book of Road Signs.

Details of Service Markers

Note:
- Top surface of covers to be painted as follows:
  - Valves normally open: blue
  - Valves normally closed: signal red
  - Scour valves: green
  - Air valves: brown

Pre-cast concrete

Barrel kerb
Mountable kerb

Horizontals, slopes & vertical sides to be painted with yellow enamel paint

Horizontal and vertical sides: (308030)